

REMARKS

Claims 23 and 25 through 30 are currently pending in the application.

This amendment is in response to the Office Action of October 20, 2004.

The amendments to the specification are made for editorial purposes. Amendments to the specification adding paragraphs numbered {0013A}, [0014A], [0015A], [0016A], and [0017A] are to provide a brief description of newly added drawing FIGS. 1A, 2A, 3A, 4A, and 5A while paragraphs numbered [0024A], [0028A], [0032A], [0033A], and [0037A] have been added to provide a description of the invention set forth in newly added drawing FIGS. 1A, 2A, 3A, 4A, and 5A. All newly added paragraphs to the specification and the newly added drawing figures are to provide a description of the invention set forth in currently pending claims 23 and 25 through 30 to comply with the provisions of 37 CFR § 1.83(a). Applicant asserts that all such amendments to the application clearly comply with the provisions of 35 U.S.C. § 132 as no new matter has been added to the application as such subject matter is contained in the original patent application serial number 08/609,354, filed March 1, 1996, which is a divisional of patent application serial number 08/089,166, filed July 7, 1993, now United States Patent 5,532,177. Applicant asserts that the description of the invention is clearly set forth in dependent claim 6 of the original patent application serial number 08/089,166 which states “. . . wherein said dopant concentration gradient increases with depth into said substrate” and dependent claim 9 thereof which states “. . . wherein said gradient increases with depth into said substrate, said etching having a rate which increases as the gradient decreases”. Applicant asserts that the claims 23 and 25 through 30 clearly comply with the provisions of 35 U.S.C. § 132 as no new matter has been added to the application and clearly comply with the provisions of 35 U.S.C. § 112, first paragraph.

35 U.S.C. § 112 Claim Rejections

Claims 23 through 30 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant respectfully traverses this rejection, as hereinafter set forth.

Applicant has amended the specification, drawings, and claims to describe the subject matter of Applicant's invention of the emitter having an increasing dopant concentration from the tip or apex of the emitter to the base thereof. Applicant asserts that such an invention is described in independent claim 1 and dependent claim 6 therefrom and independent claim 7 of the original patent application serial number 08/609,354, filed March 1, 1996, which is a divisional of patent application serial number 08/089,166, filed July 7, 1993, now United States Patent 5,532,177. Applicant asserts that the description of the invention is clearly set forth in dependent claim 6 of the original patent application serial number 08/089,166 which states ". . . wherein said dopant concentration gradient increases with depth into said substrate" and dependent claim 9 thereof which states ". . . wherein said gradient increases with depth into said substrate, said etching having a rate which increases as the gradient decreases". Applicant asserts that the claims 23 and 25 through 30 clearly comply with the provisions of 35 U.S.C. § 132 as no new matter has been added to the application and clearly comply with the provisions of 35 U.S.C. § 112, first paragraph.

. . . wherein said dopant concentration gradient increases with depth into said substrate" and dependent claim 9 thereof which states ". . . wherein said gradient increases with depth into said substrate, said etching having a rate which increases as the gradient decreases". Applicant asserts that the claims 23 and 25 through 30 clearly comply with the provisions of 35 U.S.C. § 132 as no new matter has been added to the application and clearly comply with the provisions of 35 U.S.C. § 112, first paragraph.

Claim 24 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has canceled dependent claim 24.

Claim Objections

Claims 23 through 30 are objected to under 37 C.F.R. § 1.78(b) as containing claims which conflict with claims 14, 19, 20, 21, 23, 28, 31, 34, 35, 38, 40, 42 through 44, 48 and 62 (renumbered in issued patent as claims 1, 5, 6, 7, 9, 14, 17, 20, 21, 22, 24, 26 through 28, 29 and 30) of U.S. Patent Application Serial No. 08/609,354 (erroneously referred to by Examiner as Serial No. 09/609,354), now U.S. Patent No. 6,825,596.

Applicant asserts that currently pending claims 23 and 35 through 30 of the present application do not conflict with in issued patent as claims 1, 5, 6, 7, 9, 14, 17, 20, 21, 22, 24, 26 through 28, 29 and 30 of United States Patent 6,825,596 as currently pending claims 23 and 25 through 30 of the present application claim a dopant concentration which decreases from the base of an emitter to the tip or apex thereof whereas claims 1, 5, 6, 7, 9, 14, 17, 20, 21, 22, 24, 26 through 28, 29 and 30 of United States Patent 6,825,596 claim a dopant concentration which

increases from the base of an emitter to the tip or apex thereof. As such, Applicant has maintained a clear line of demarcation between the claimed inventions of United States Patent 6,825,596 and the claimed inventions of claims 23 and 25 through 30 of the present application.

Double Patenting Rejection Based on United States Patent 6,825,596 (formerly U.S. Patent Application Serial No. 08/609,354, erroneously referred to by Examiner as Serial No. 09/609,354)

Claims 23 through 30 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 14, 19, 20, 21, 23, 28, 31, 34, 35, 38, 40, 42 through 44, 48 and 62 (renumbered in issued patent as claims 1, 5, 6, 7, 9, 14, 17, 20, 21, 22, 24, 26 through 28, 29 and 30) of United States Patent 6,825,596.

In order to avoid further expenses and time delay, Applicant elects to expedite the prosecution of the present application by filing a terminal disclaimer to obviate the double patenting rejections in compliance with 37 C.F.R. §1.321 (b) and (c). Applicant's filing of the terminal disclaimer should not be construed as acquiescence of the Examiner's double patenting or obviousness-type double patenting rejection. Attached is the terminal disclaimer and accompanying fee.

After carefully considering the cited prior art, the rejections, and the Examiner's comments, Applicant has amended the claimed invention to clearly distinguish over the cited prior art.

Applicant submits that claims 23 through 30 are clearly allowable over the cited prior art.
Applicant requests the allowance of claims 23 through 30 and the case passed for issue.

Respectfully submitted,



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IN THE DRAWINGS:

Applicant previously submitted Figures 1, 2, 3, 4, and 5. Applicant now desires to submit for approval new formal drawings of Figure 1A, Figure 2A, Figure 3A, Figure 4A, and Figure 5A with this amendment. Each of such drawing figures illustrates an alternative of the present invention where the dopant 13A concentration increases with depth into the substrate 11. Marked-up drawing figures for each of such drawing figures are further submitted with this amendment to show the drawing changes for the increasing dopant 13A concentration.

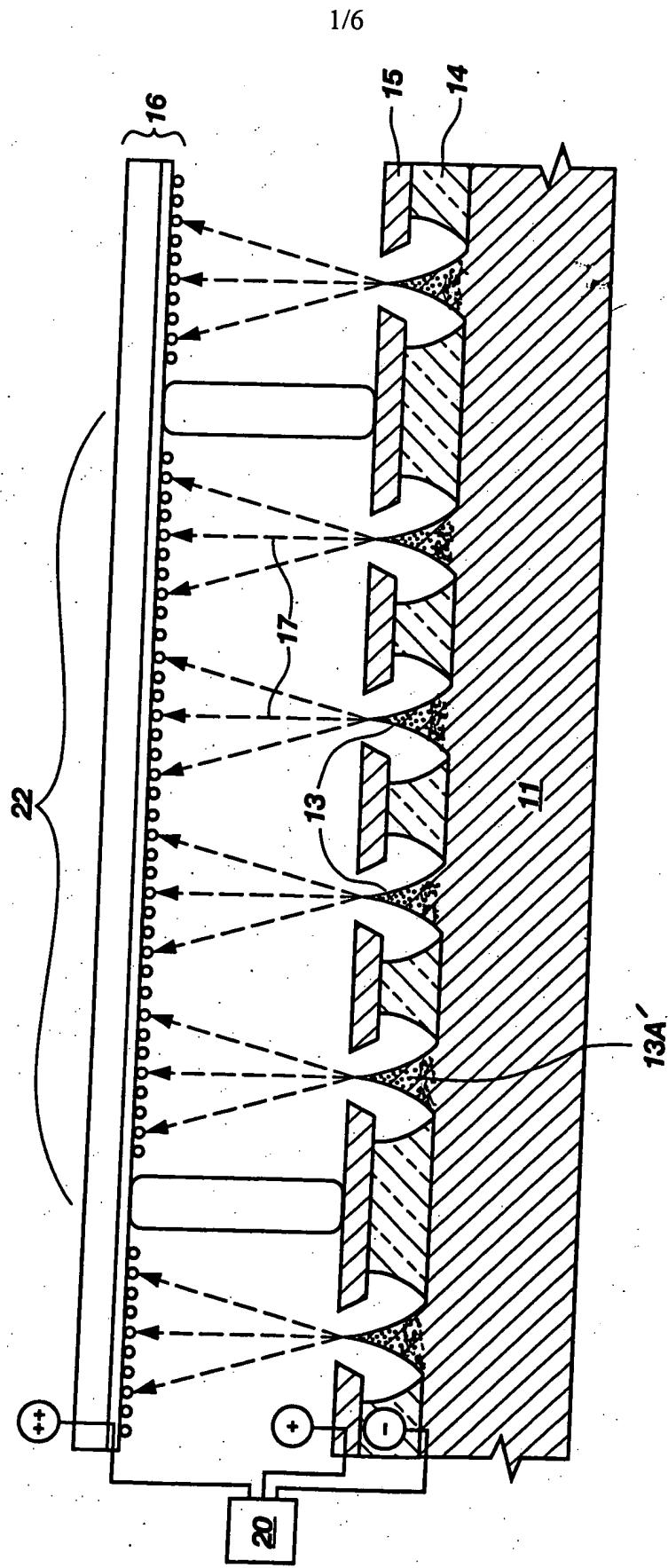


Fig. 1A



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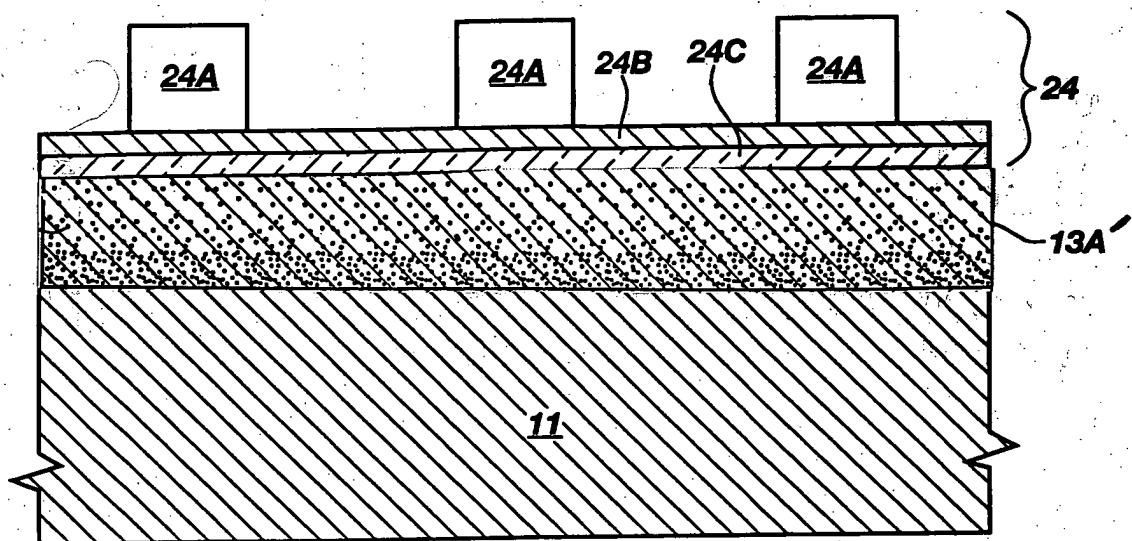


Fig. 2A

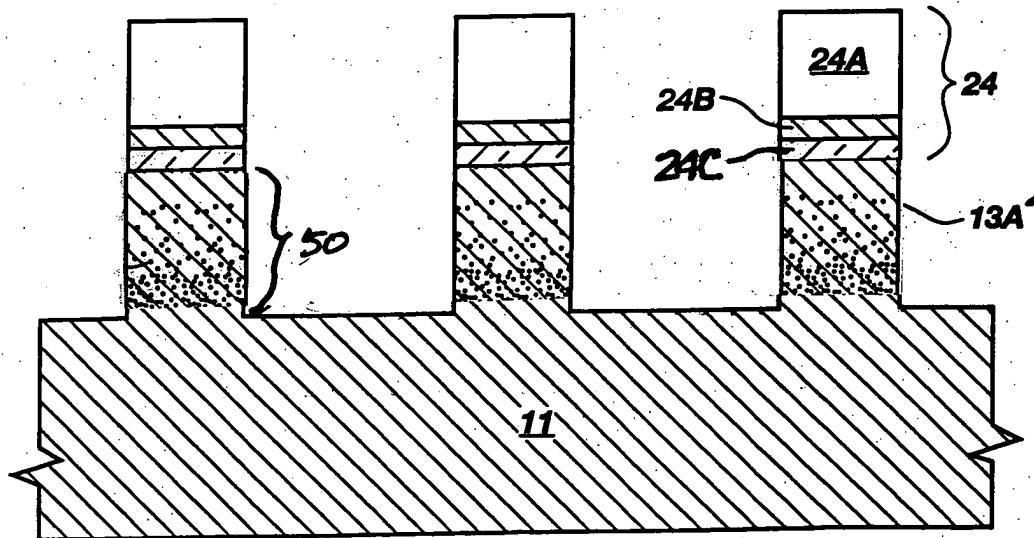


Fig. 3A

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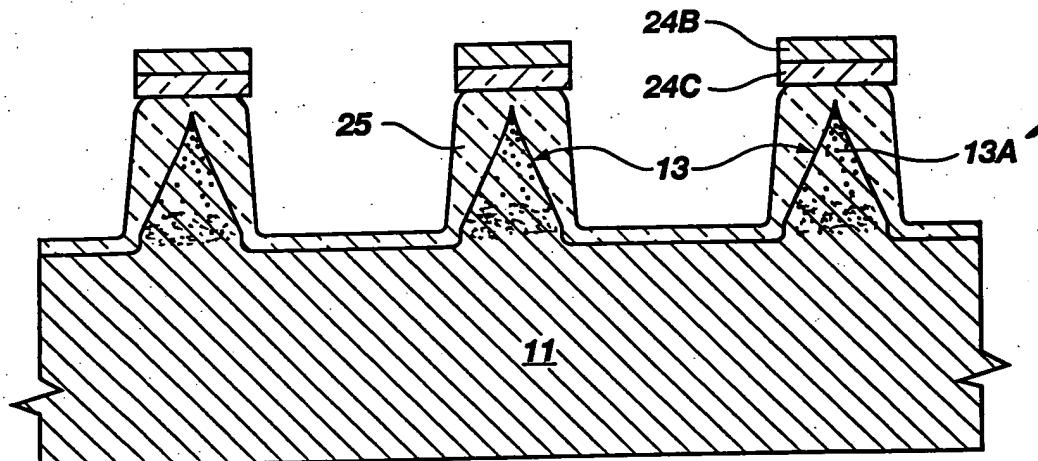


Fig. 4A

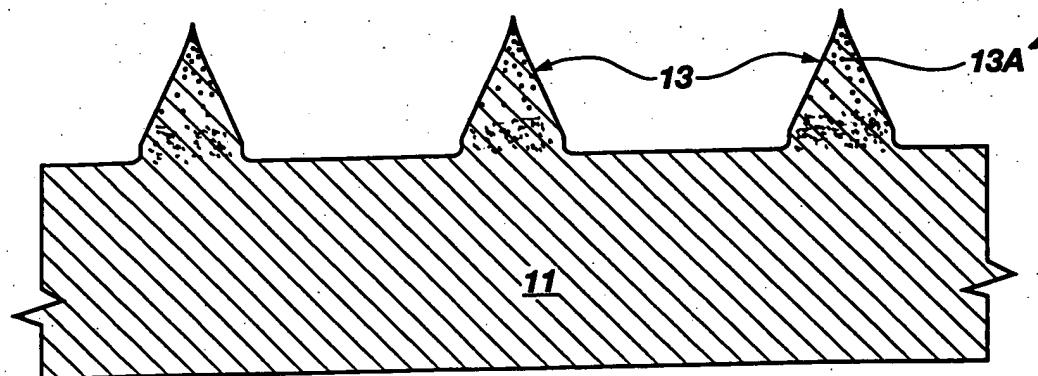


Fig. 5A